Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A transcoder for converting a received first digital signal with a first modulation and encoding scheme to a second digital signal with a second modulation and encoding scheme, the transcoder comprising:

a demodulator that produces a demodulated digital stream of data from the received first digital signal;

a modulator in signal communication with the demodulator, where the modulator modulates the demodulated digital stream of data with the second modulation and encoding scheme and produces a new modulated digital stream of data; and

an upconverter in signal communication with the modulator, where the upconverter produces the second digital signal from the new modulated digital stream of data.

2. (Previously Presented) The transcoder of claim 1, wherein the upconverter includes:

an upsampler that receives the new modulated digital stream of data from the modulator and produces an upsampled signal;

a complex mixer in signal communication with the upsampler, where the complex mixer is capable of producing an intermediate frequency ("IF") digital signal by upconverting the upsampled signal with an IF carrier signal; and

a combiner in signal communication with the complex mixer, where the combiner is capable of producing the second digital signal having sampling replicas from the IF digital signal.

3. (Original) The transcoder of claim 2, wherein the second digital signal may include multiple in-phase and quadrature-phase modulated image replicas.

4. (Previously Presented) The transcoder of claim 2, wherein a clock signal is input into both the upsampler and a digital-to-analog converter ("DAC") in signal communication with the combiner.

5. (Previously Presented) The transcoder of claim 4, wherein the complex mixer is connected to a numerically controlled oscillator that produces the IF carrier signal.

6. (Previously Presented) The transcoder of claim 5, wherein the IF carrier signal is at a lower frequency than the clock signal.

7. (Original) The transcoder of claim 5, wherein the numerically controlled oscillator is an internal component of the transcoder.

8. (Original) The transcoder of claim 5, wherein the numerically controlled oscillator is an external component of the transcoder.

9. (Original) The transcoder of claim 1, wherein the first modulation and encoding scheme is 8-PSK Turbo Coding.

10. (Original) The transcoder of claim 1, wherein the second modulation and encoding scheme is QPSK.

11. (Previously Presented) A transcoder for converting a received first digital signal with a first modulation and encoding scheme to a second digital signal with a second modulation and encoding scheme, the transcoder comprising:

means for demodulating the received first digital signal to produce a demodulated digital stream of data;

means for modulating the demodulated digital stream of data with the second modulation and encoding scheme to produce a new modulated stream of data; and

means for upconverting the new modulated digital stream of data to produce the second digital signal.

12. (Previously Presented) The transcoder of claim 11, wherein the upconverter means includes:

means for upsampling the modulated digital stream and producing an upsampled signal;

means for mixing the upsampled signal with an intermediate frequency ("IF") carrier signal to produce an IF digital signal; and

means for converting the IF digital signal to the second digital signal having sampling replicas.

13. (Previously Presented) The transcoder of claim 12, wherein the second digital signal may include multiple in-phase and quadrature-phase modulated image replicas.

14. (Previously Presented) The transcoder of claim 12, wherein a clock signal is input into both the upsampling means and a DAC in signal communication with the converting means.

15. (Previously Presented) The transcoder of claim 14 wherein the mixing means is connected to a numerically controlled oscillator that produces the IF carrier signal.

16. (Previously Presented) The transcoder of claim 15 wherein the IF carrier signal is at a lower frequency than the clock signal.

17. (Previously Presented) The transcoder of claim 12, wherein the mixing means is connected to a numerically controlled oscillator that produces the IF carrier signal that is utilized by the mixing means.

18. (Previously Presented) The transcoder of claim 17, wherein the IF carrier signal is at a lower frequency than the clock signal.

19. (Original) The transcoder of claim 11, wherein the first modulation and encoding scheme is 8-PSK Turbo Coding.

20. (Original) The transcoder of claim 11, wherein the second modulation and encoding scheme is QPSK.

21. (Previously Presented) A method for converting a first digital signal with a first modulation and encoding scheme to a second digital signal with a second modulation and encoding scheme, the method comprising:

demodulating a received signal having a received modulation and encoding scheme to generate the first digital signal;

modulating the demodulated first digital signal with the second modulation and encoding scheme, wherein the modulating produces a new modulated digital signal; and

upconverting the new modulated digital signal to produce the second digital signal.

22. (Previously Presented) The method of claim 21, wherein the step of upconverting includes:

upsampling the new modulated digital signal;

mixing the upsampled new modulated digital signal with an intermediate frequency ("IF") carrier signal to produce an IF digital signal; and

sampling the IF digital signal through a mixer to produce the second digital signal.

23. (Previously Presented) The method of claim 21, wherein the first modulation and encoding scheme is 8-PSK Turbo Coding.

24. (Previously Presented) The method of claim 21, wherein the second modulation and encoding scheme is QPSK.